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**From:** CN=Erin Foresman/OU=R9/O=USEPA/C=US  
**Sent:** Mon 11/26/2012 11:01:30 PM  
**Subject:** Good quotes

FYI :-)

#### SWRCB 2010 Flows Report

The best available science suggests that current flows are insufficient to protect public trust resources. Page 2 (first sentence)

Although flow modification is an action that can be implemented in a relatively short time in order to improve the survival of desirable species and protect public trust resources, public trust resource protection cannot be achieved solely through flows – habitat restoration also is needed. One cannot substitute for the other; both flow improvements and habitat restoration are essential to protecting public trust resources. (emphasis added) Page 7.

The public trust resources that are the subject of this proceeding include those resources affected by flow, namely, native and valued resident and migratory aquatic species, habitats, and ecosystem processes. Page 10.

Delta Environmental Flows Group (expert panel presentation to State Board  
[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/deltaflow/docs/presentations/intro\\_1.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/presentations/intro_1.pdf))

Recent flow regimes both harm native species and encourage non-native species  
Flow is a major determinant of habitat and transport  
Recent Delta environmental flows are insufficient to support native Delta fishes for today's habitats

#### CDFG Quantifiable Biological Objectives and Flow Criteria

"Fish population declines coupled with these hydrologic and physical changes suggest that current Delta water flows for environmental resources are not adequate to maintain, recover, or restore the functions and processes that support native Delta fish." First page of Executive Summary -- no page numbers (?).

"Water flow through the Delta is one of the primary drivers of ecosystem function. The timing, magnitude, quality of flows, and way in which water is diverted all influence habitat features such as temperature, turbidity, transport, nutrient loadings, pollutant dispersal, and other factors." First page, third paragraph of Executive Summary

#### Interim Federal Action Plan

Water flow through the Delta is one of the primary drivers of ecosystem function. The timing, magnitude, quality of flows, and way in which water is diverted all influence habitat features such as temperature, turbidity, transport, nutrient loadings, pollutant dispersal, and other factors. Page 2

(I know this quote does not say anything about the WQCP or flow objectives. It's tough to follow up this quote by saying that the current regulatory framework is effectively protecting aquatic life.)

Thus, it appears that if the goal is to sustain an ecosystem that resembles the one that appeared to be functional up to the 1986-93 drought, exports of all types will necessarily need to be limited in dry years, to some fraction of unimpaired flows that remains to be determined. Page 105

Despite these challenges, San Francisco Bay is also one of only a few estuarine locations where site-specific ecological impacts from contaminants have been clearly shown in the field. Most obvious is the general observation that since the 1980s, visible impacts of contamination have declined along with concentrations of chemicals in the environment (as the Clean Water Act was implemented). Fish kills that occurred almost once per day in the Bay and its tributaries in the 1980s, despite a lack of eutrophication, are now rare (Luoma and Cloern 1982, Brooks et al. 2011). Top predators (e.g., striped bass), which once commonly contained lesions consistent with organic contaminant effects (Luoma and Cloern 1928), have recovered their health. Finally, spatially broad detection of toxicity in standard toxicity tests in the waters of the Delta and the major rivers are less frequent than earlier. Populations of piscivorous birds that were near local extinction because of reproductive failures are recovering. Page 78

Thus, while the mechanisms behind the influence the of position of X2 on the abundance of a variety of biota remain hypothetical, the statistical relations reported in several papers show that abundance of a number of species at different trophic levels found in the Delta and San Francisco Bay is higher when X2 is farther downstream. This implies that sufficient reductions in outflow due to diversions would tend to reduce the abundance of these organisms. Page 60

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